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ABSTRACT

Asbestos, a mineral known to cause cancer in humans, is present in an unknown number of schools where it may be hazardous to the health of students and employees. Although the Federal Government has programs designed to address the asbestos situation, it has not determined in what specific circumstances asbestos is a hazard. Therefore, State and local school officials currently face a dilemma concerning what to do when they find asbestos in their schools. The first chapter of this document discusses the nature and uses of asbestos, health hazards, Federal action to address asbestos in schools, and a summary of Federal efforts to reduce asbestos in schools. The second chapter discusses Environmental Protection Agency (EPA) actions to address asbestos in schools, focusing on EPA's technical assistance program (indicated to be a limited success), various State and local abatement responses, and EPA inspection and notification rules. The third chapter considers the limited impact of the Asbestos School Hazard Detection and Control Act of 1980, indicating that no loans/grants are available for asbestos detection and control, that asbestos hazard criteria are still lacking, and that state reports and records provide limited information. Appendices include characteristics of State programs to address asbestos in schools and state asbestos program summaries. (Author/JN)

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Asbestos In Schools: A Dilemma

Many of the Nation's schools are thought to contain asbestos, a mineral known to cause cancer in humans. Federal programs have imposed asbestos inspection and record-keeping requirements on States and local education agencies and have encouraged control actions. These programs, however, have not resolved the dilemma school officials face in trying to distinguish between hazardous situations needing to be corrected and those presenting relatively insignificant risks.

Without Federal criteria, State and local officials' decisions on asbestos in their schools varied from no action in one locality to total asbestos removal in another. As a result, there is no assurance that school occupants are being adequately protected or that abatement actions being taken are necessary.

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WASHINGTON, D.C. 20548

COMMUNITY AND ECONOMIC
DEVELOPMENT DIVISION

B-206367

The Honorable James J. Florio
Chairman, Subcommittee on Commerce,
Transportation and Tourism
Committee on Energy and Commerce
House of Representatives

The Honorable George Miller
Chairman, Subcommittee on Labor Standards
Committee on Education and Labor
House of Representatives

As requested in your December 14, 1981, letter, we have reviewed the progress of Federal efforts to reduce asbestos hazards in schools.

As arranged with your offices, unless you publicly release its contents earlier, we will make this report available to other interested parties 10 days after the issue date.

At your request, we did not obtain written agency comments. The matters covered in this report, however, were discussed with agency officials and their comments are incorporated where appropriate.

Henry Eschwege

Henry Eschwege
Director

REPORT BY THE U.S. GENERAL ACCOUNTING OFFICE

ASBESTOS IN SCHOOLS: A DILEMMA

D I G E S T

Asbestos, a mineral known to cause cancer in humans, is present in an unknown number of schools where it may be hazardous to the health of school-children and employees. Although the Federal Government has programs designed to address the asbestos situation, it has not determined in what specific circumstances asbestos is a hazard. Therefore, State and local school officials currently face a dilemma concerning what to do when they find asbestos in their schools. According to the Environmental Protection Agency (EPA), not all asbestos conditions in schools warrant action and it is validating criteria to determine which ones do.

EPA initiated a technical assistance program in 1979 to help State and school officials voluntarily identify and correct asbestos hazards. In May 1982 it issued a rule, under the Toxic Substances Control Act, requiring that schools be inspected for asbestos and that employees and parent-teacher groups be notified of asbestos presence.

Because the Congress found that no systematic program existed for identifying hazardous conditions in schools or for remedying those conditions, it enacted the Asbestos School Hazard Detection and Control Act of 1980. The Department of Education was charged with administering this act, which was to provide financial assistance to detect and abate asbestos, impose recordkeeping and reporting requirements on the States, and establish an informational program for controlling asbestos in schools. Under the informational program, Education was to establish procedures for detecting and controlling asbestos as well as to review and revise EPA's guidelines on when asbestos is hazardous.

The Chairmen, Subcommittee on Commerce, Transportation and Tourism, House Committee on Energy and Commerce, and Subcommittee on Labor Standards, House Committee on Education and Labor, asked GAO to assess

--the impact of EPA's technical assistance program in stimulating States and school districts to correct asbestos problems;

--other actions EPA has taken or could have taken to protect schoolchildren from asbestos; and

--compliance by the States, EPA, and Education with the Asbestos School Hazard Detection and Control Act. (See pp. 1 to 6.)

EPA's TECHNICAL ASSISTANCE PROGRAM: A LIMITED SUCCESS

EPA's technical assistance program had some impact in stimulating voluntary inspections and abatement activity. However, it was not successful in getting all schools to inspect for asbestos. GAO found that about 21 percent of the public schools in 11 States had not been inspected. These results are somewhat similar to an EPA survey indicating that 30 percent of the Nation's schools had not been inspected--approximately 33,000 public and private schools. (See pp. 7 to 12.)

Moreover, the quality of inspections that were done is questionable, based on EPA standards. Many inspections were restricted to certain areas, such as those used by students, or features such as piping. In other cases, school officials relied on construction records rather than visual inspections and test sample analysis. The large number of schools still uninspected contributed to EPA's decision to require school inspections and employee and parent-teacher notification by June 1983. (See pp. 13 and 16 to 18.)

HAZARD CRITERIA BEING DEVELOPED

Although EPA requires school officials to identify asbestos in schools, it has not determined when asbestos is hazardous enough to warrant abatement. EPA maintains that some circumstances warrant abatement, but others do not. Although EPA provides some guidance on various factors to consider when making abatement decisions, it found that these factors were unreliable when tested. EPA expects to validate a more reliable indicator by November 1982 but, because of the various review levels involved,

has no target date for incorporating it into guidance or plans to require its use. Consequently, State and local officials must make abatement decisions without specific EPA criteria on when asbestos conditions warrant action. (See pp. 9, 10, 17, and 18.)

VARIED STATE AND LOCAL ACTIONS

Without specific criteria, State and local policies on asbestos abatement ranged from total removal to no action. For example, the Houston Independent School District has found asbestos in 115 of its 232 schools but has decided to take no abatement action until EPA determines under what circumstances asbestos is considered hazardous. In contrast, the State of Florida requires that public schools remove all friable (readily crumbled) asbestos materials, except where impractical.

Other school districts took a more flexible approach to abatement. For example, the State of Massachusetts and the San Diego Unified School District developed separate numerical systems for measuring potential asbestos hazards and assessing which abatement method was appropriate for each school. EPA doubts the systems' reliability because many of the factors used in these systems are the same ones EPA found unreliable in its tests.

Still other school districts responded to public pressure. For example, both Pittsburgh and Philadelphia school districts abated asbestos conditions they did not consider hazardous because of media and parental pressure.

These cases indicate that there is no assurance that school occupants are being adequately protected or that abatement actions being taken are necessary. (See pp. 13 to 15.)

LITTLE ACCOMPLISHED UNDER THE ACT

Overall, the Asbestos School Hazard Detection and Control Act of 1980 has had little impact. The grant and loan program for detecting and abating asbestos in schools was not funded. Although Education requested funds, the Office of Management and Budget rejected the request because of other budget priorities. Without

funding, Education relegated the program to a low priority. (See pp. 20 and 21.)

Education provided procedures for detecting and correcting asbestos. However, as required by the act, Education did not complete its revision of EPA's guidelines for determining when asbestos in schools is hazardous and needs abatement. Consequently, as was the case with EPA, Education did not resolve the dilemma facing school officials: When should asbestos be abated in their schools? (See pp. 21 to 24.)

Additionally, State reports and records required by the act provided little additional information on the extent of asbestos in schools. For the 11 States that GAO reviewed, only 6 of 22 required reports were submitted. Also, the requirement that States maintain records on asbestos activities was based on the understanding that EPA would issue its rule requiring inspection and recordkeeping at the local level to coincide with the issuance of Education's recordkeeping procedures at the State level. However, because EPA did not issue its rule until 16 months after Education's, local inspections were voluntary and did not always conform to EPA's recommended procedures. Therefore, State records were incomplete because they were based on limited inspections of questionable quality, as described under the technical assistance program. (See pp. 24 to 27.)

EPA has since issued its final regulations requiring local education agencies to begin inspecting schools, which would provide the data base for State recordkeeping as envisioned by the act. (See pp. 27 and 28.)

Because EPA expects to verify a new method of assessing asbestos exposure by November 1982 and issue guidance later, GAO has no recommendations at this time. (See pp. 18, 19, 27, and 28.)

As requested by the chairmen, GAO did not obtain written comments on this report. However, GAO did discuss the matters in the report with agency officials and, where appropriate, included their views. (See p. 6.)

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ABBREVIATIONS

EPA	Environmental Protection Agency
GAO	General Accounting Office
TAP	technical assistance program
TSCA	Toxic Substances Control Act

CHAPTER 1

INTRODUCTION

Asbestos is a term used to describe various types of fibrous minerals. Asbestos-containing materials were frequently sprayed on walls and ceilings to fireproof, insulate, soundproof, and decorate schools built or renovated between 1946 and 1972. Research has proven that asbestos causes cancer. Since the mid-1970's, public concern has arisen that asbestos in schools could pose a health hazard, particularly for schoolchildren. The Environmental Protection Agency (EPA) and the Department of Education are the primary Federal agencies responsible for addressing the asbestos-in-schools situation.

NATURE AND USES OF ASBESTOS

Asbestos is the generic name for a group of naturally occurring minerals which separate into fibers. The U.S. Bureau of Mines estimates that U.S. asbestos use in the 1970's ranged from a high of 883,000 tons in 1973 to a low of 592,000 tons in 1979, the latest year for which data was available. Most of the asbestos fiber used in the United States is imported from Canada. A small amount is also imported from South Africa.

Asbestos is valued for its fireproofing, insulating, and acoustical properties and tensile strength. From 70 to 80 percent of the asbestos used in the United States is for such construction products as cement pipe and sheeting, flooring and roofing materials, and thermal and electrical insulation. Asbestos-containing materials were also used extensively in buildings constructed between 1946 and 1972. These materials were usually sprayed on but were also troweled on overhead surfaces, steel beams, ceilings, and walls. Asbestos is also found in pipe and boiler insulation. Other users include the transportation and appliance industries.

HEALTH HAZARDS

In 1979 the World Health Organization's International Agency for Research on Cancer listed asbestos as 1 of 18 chemicals known to cause cancer in humans. According to EPA, extensive epidemiologic evidence demonstrates that inhaling asbestos can lead to serious, irreversible, and often fatal diseases such as pleural and peritoneal mesothelioma, 1/ lung cancer, and asbestosis. 2/ Asbestos-related diseases may not appear until 15 to 40 years after first exposure.

1/Rare cancers of the linings of the lung and abdominal cavities.

2/A progressive lung disease characterized by fibrosis or scarring of the lung tissue.

Epidemiologic studies have generally involved various types of asbestos workers who had long-term exposure to high asbestos concentrations. In addition, however, EPA has concluded that adverse health effects of nonoccupational exposure to asbestos have been amply demonstrated. Some persons whose only known exposure to asbestos has been from living in the same households as asbestos workers or in the neighborhoods of asbestos mines, mills, and processing facilities have developed mesothelioma and signs of asbestosis.

Several studies have also shown or indicated a dose-response relationship between asbestos exposure and asbestosis, lung cancer, and mesothelioma. This means that an increase in asbestos exposure increases the risk of disease. No safe level, or "threshold," of asbestos exposure has been demonstrated.

Significant disagreement exists regarding the health hazards presented by asbestos in schools. For example, Johns-Manville, a producer of asbestos fiber and asbestos-containing products, stated in 1979 that the workplace experience is of limited relevance to the school situation and that the presence of asbestos-containing ceiling materials in schools does not present an unreasonable risk of injury to health or the environment. In contrast, the Environmental Defense Fund, a private nonprofit environmental organization, stated in 1978 that, because of evidence demonstrating a clear association between asbestos and various forms of cancer, asbestos in schools may increase cancer rates among schoolchildren and other building users and does pose an unreasonable risk of injury. Each group cited asbestos studies, none of which addressed the health effects of asbestos in schools to support its position.

To estimate the risk presented by low-level asbestos exposure in schools, EPA applied a linear dose-response curve to the results of a study of asbestos insulation workers. In September 1980 in proposed rulemaking on asbestos in schools, EPA concluded that in a worst-case situation between 100 and 6,800 premature cancer deaths will result from exposure to prevailing asbestos levels in schools. EPA developed a "most reasonable" estimate of 1,100 premature deaths. Reviewers criticized several aspects of EPA's analysis, contending that it overstates the risk presented by asbestos in schools.

Although asbestos is present in many schools, EPA does not consider all conditions to be equally hazardous. In some cases exposure levels may be significant, while in others exposure levels and resulting health risks are relatively minor.

FEDERAL ACTION TO ADDRESS ASBESTOS IN SCHOOLS

EPA and Education are the agencies primarily responsible for Federal actions concerning asbestos in schools. EPA has acted under the Clean Air Act and the Toxic Substances Control Act (TSCA). Education administers the Asbestos School Hazard Detection and Control Act.

Clean Air Act

The Clean Air Act is designed to protect and enhance the quality of the Nation's air. Section 112 of the act authorizes EPA to regulate emissions of hazardous air pollutants--those which in EPA's judgment, contribute to air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness. EPA determined that asbestos was a hazardous air pollutant, and in 1973 it banned the spraying of asbestos-containing insulation in buildings. In 1978 EPA extended the ban to all uses of spray-on asbestos on buildings, structures, beams, ceilings, walls, pipes, and conduits. EPA also mandated work practices to be followed when buildings containing asbestos material were demolished or renovated, to minimize the release of asbestos fibers into the atmosphere.

Toxic Substances Control Act

In 1976 the Congress enacted TSCA giving EPA broad authority to control chemical substances to protect the public health and environment against unreasonable risks. TSCA was intended to fill gaps left by other legislation and allows EPA to regulate a chemical only when adequate protection cannot be achieved otherwise. After reviewing the authority available to the Occupational Safety and Health Administration, the Consumer Product Safety Commission, and Education, EPA determined that action by those agencies would not sufficiently reduce the risks of asbestos in schools. Although the Occupational Safety and Health Administration has established asbestos standards for the workplace, it does not have direct jurisdiction to enforce the standards in public schools and private nonprofit schools because they are not "businesses affecting commerce" as defined in its authorizing legislation. Requirements which the Consumer Product Safety Commission could impose would necessitate identifying specific manufacturers, distributors, or retailers of asbestos products in schools. EPA decided that such an identification would be prohibitively difficult. EPA also decided that Education could not take adequate action to reduce the risks of asbestos in schools because it has no authority to require that schools be inspected. EPA, therefore, determined that regulation under TSCA was needed to reduce the risks of asbestos in schools.

In March 1979 EPA launched a technical assistance program (TAP) to encourage voluntary identification and correction of asbestos hazards in schools. EPA provided advice and information on inspection procedures, sampling, and abatement methods. In May 1982 EPA issued a regulation requiring that schools be inspected and that employees and parent-teacher associations be notified if asbestos is found.

Asbestos School Hazard Detection and Control Act

Despite EPA's efforts, the Congress found in 1980 that

--the presence of friable or easily damaged asbestos in school buildings creates an unwarranted hazard to the health of schoolchildren and employees and

--no systematic program exists for identifying or remedying hazardous conditions in schools.

Therefore, the Congress enacted the Asbestos School Hazard Detection and Control Act of 1980. It was intended to provide financial assistance to detect and abate asbestos hazards and to establish a program for controlling asbestos in schools.

OBJECTIVES, SCOPE, AND METHODOLGY

In December 1981 the Chairmen, Subcommittee on Labor Standards, House Committee on Education and Labor, and Subcommittee on Commerce, Transportation and Tourism, House Committee on Energy and Commerce, asked us to review the progress of Federal efforts to reduce asbestos in schools. They asked us to assess

--the impact of EPA's TAP in stimulating State and local action to correct asbestos problems in schools;

--other actions EPA has taken or could have taken to protect schoolchildren from asbestos; and

--compliance by the States, EPA, and Education with the Asbestos School Hazard Detection and Control Act.

To meet these objectives, we studied TSCA and the Asbestos School Hazard Detection and Control Act and their legislative histories. We also reviewed regulations, proposed regulations, and guidelines issued by EPA and Education under these acts and congressional hearings and technical documents on asbestos.

We reviewed EPA files and interviewed EPA officials involved in asbestos-related matters to develop data on EPA's rulemaking activities and the operation of TAP.

We interviewed Education officials to determine the extent to which the Asbestos School Hazard Detection and Control Act had been implemented. We also searched Education files for documentation of its actions and State compliance with the act.

We interviewed representatives of the Occupational Safety and Health Administration, the Consumer Product Safety Commission, the Department of Justice, the National Cancer Institute, the Asbestos Information Association of North America, and the Environmental Defense Fund to discuss asbestos hazards in schools and ways of dealing with such hazards.

To obtain further information on State and local response to the Asbestos School Hazard Detection and Control Act and EPA's TAP, we reviewed the actions taken in 10 States and the District of Columbia. The States were selected because they have the largest school-age populations in the Nation, based on 1978 data from the Bureau of the Census. The District of Columbia was included at the request of the subcommittee. 1/ Combined, the 11 States we reviewed had over half the Nation's school-age population. We visited each of these States to interview officials involved with asbestos hazards in schools and to review State files.

The 11 selected States are in seven different EPA regions--I (Boston), II (New York), III (Philadelphia), IV (Atlanta), V (Chicago), VI (Dallas), and IX (San Francisco). We visited each of the seven regional offices before visiting the States to discuss their approaches to the school asbestos program and to obtain an overview of the asbestos programs in each State under the regional office's jurisdiction.

In 5 of the 11 States, summary data was not available to show how many schools had been inspected, how many had asbestos, or how many had undergone corrective action. In these States, we attempted to obtain this information from the States' most populous school districts; and, in most cases, it was available. When it was not available at the district level, we did not attempt to contact individual schools because of the time and resources that would have been required.

Through visits and telephone calls, we interviewed numerous school district officials to discuss the criteria they used to make abatement decisions. We did not use any scientific basis to select these school districts.

1/To make subsequent discussions easier, we will refer to the District of Columbia as a State, bringing the total of States reviewed to 11. The other States are California, Florida, Illinois, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, and Texas.

Our review was conducted primarily from December 1981 through April 1982. It was performed in accordance with our current standards for audit of governmental organizations, programs, activities, and functions.

As requested by the chairmen, we did not obtain written comments on this report. However, we did discuss the report with agency officials and, where appropriate, included their views.

CHAPTER 2

EPA ACTIONS TO ADDRESS ASBESTOS IN SCHOOLS

EPA's technical assistance program, established to identify and correct asbestos hazards in schools, stimulated some State and local activity. However, the program's effectiveness has been limited by its voluntary nature and its lack of criteria defining when asbestos is hazardous and what type of abatement 1/ is needed. As a result, many schools have not been inspected and the quality of many inspections made is questionable. When asbestos was found, different criteria were used to determine whether abatement was necessary.

Although EPA recently issued a rule requiring school officials to inspect for asbestos and notify employees and parent-teacher groups if any is found, it does not include criteria detailing when asbestos is hazardous and must be abated. Without this criteria, there is no assurance that school occupants are being adequately protected or that abatement actions being taken are necessary. However, EPA expects to verify a new method of assessing asbestos exposure by November 1982 and issue guidance later.

EPA's TECHNICAL ASSISTANCE PROGRAM: A LIMITED SUCCESS

In 1979 EPA responded to concerns about asbestos in schools by implementing TAP. TAP was intended to provide information and advice to State and school officials faced with asbestos in schools and to encourage asbestos inspections and abatement. It had some success in both areas.

Under TAP, EPA made known the potential hazards of asbestos in schools. It also recommended inspection, sampling, and abatement procedures. The State and school officials that we contacted were aware of potential asbestos hazards and had received EPA's guidance or information. TAP, however, did not include definitive criteria for determining when asbestos found during an inspection warrants corrective action or for determining the type of action that should be taken.

TAP did stimulate some inspection and abatement activity, even though it placed absolutely no requirements on States or school districts. It is impossible to quantify the impact of TAP, however, because complete, accurate data on inspections and

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1/Abatement includes removing, encapsulating (generally spraying on a sealant), and enclosing (installing barrier) asbestos and avoiding areas or activities which disturb the asbestos.

abatement are unavailable and because actions that have been taken were not always motivated by TAP.

The States have taken different approaches to identifying and abating asbestos in schools. Five of the 11 States that we reviewed have taken, or are taking, action to achieve the inspection of all their public schools. In the remaining six States, performing inspections is strictly a local decision. The States generally leave asbestos abatement decisions to school district or individual school officials. State and school officials have used various criteria in their decisionmaking.

Inspections performed to date have not always conformed with EPA's guidance on appropriate methods of inspection and analysis; and, in some cases, there is no assurance that all asbestos was identified. School districts in two States are now finding that asbestos was overlooked during previous inspections.

Technical assistance provided

TAP has provided and continues to provide information to State and local officials. One of the major components of EPA's TAP was a set of guidance documents which EPA began distributing in March 1979 to State governors, State asbestos program coordinators, and approximately 15,000 school districts. Over 150,000 copies of the documents have been distributed. The guidance documents contain background information on asbestos in buildings; regulatory standards regarding abatement work; and procedures for inspections, sampling, and abatement. The guidance recommends the following steps (1) visually inspect the buildings for friable material (readily crumbled) which might contain asbestos, (2) take bulk samples of suspect material, (3) have the bulk samples analyzed, (4) if asbestos is present, assess exposure level to determine the extent of potential hazards, and (5) abate if necessary. EPA also distributed a 12-minute guidance film and videotape to its regional offices and some States and issued a question-and-answer booklet about asbestos and TAP.

EPA conducted programs to improve testing and sampling techniques as well as to provide methods of reducing asbestos exposure. EPA has worked with asbestos analytical laboratories to help improve the quality of testing. According to the Director, EPA's Exposure Evaluation Division, EPA's efforts increased testing accuracy from 90 percent disagreement among laboratories regarding the presence or absence of asbestos in a sample to agreement among laboratories regarding the actual content of asbestos. EPA also developed representative sampling procedures to assure that asbestos samples reflect the asbestos level in an entire area and established two toll-free telephone numbers to provide sampling information and assistance. In addition, EPA provided guidance on some inexpensive maintenance practices for reducing asbestos exposure, such as wet mopping instead of sweeping floors, and is experimenting with filter systems to remove asbestos residues remaining in a room after abatement.

At each EPA regional office we visited, a regional asbestos coordinator and a technical advisor are implementing the program. The technical advisors were provided through an EPA grant to the American Association of Retired Persons. Most EPA regions we visited have one full-time-equivalent staff in this capacity.

Regional activities have consisted of conducting workshops, performing inspections, and responding to inquiries. The workshops covered health hazards of asbestos exposure, procedures for identifying hazards, abatement options, and assistance available from EPA. Inspections have generally been done on request.

Hazard criteria incomplete

Despite the technical assistance, EPA provides only limited guidance on a key issue--when is asbestos hazardous enough to warrant abatement. Earlier efforts to develop such guidance have been unsuccessful because EPA lacked the necessary scientific measurement which correlated with exposure. However, recent research has yielded what EPA believes to be a promising measure which, when validated, could provide such definitive criteria.

Although EPA provided information on the advantages and appropriateness of different abatement methods, it did not provide specific decisionmaking criteria in its March 1979 guidance documents. EPA listed eight factors to consider when assessing asbestos exposure in schools. These included (1) condition of material, (2) water damage, (3) exposed surface area, (4) accessibility, (5) activity and movement, (6) air plenum or direct air stream, (7) friability, and (8) asbestos content.

EPA later distributed a draft scoring system using a mathematical formula which could be used as an aid in assessing exposure and in deciding what abatement method to use. In the scoring system, each of the eight factors listed in the TAP guidance documents was assigned a score corresponding to the extent that factor applied in a given school area. A total exposure score was produced by summing factors 1 through 6 and multiplying that sum by factors 7 and 8. As the score increased, it was assumed that the airborne asbestos concentration increased. The exposure score was then applied to the corrective action scale, which suggested the appropriate corrective action.

Although the scale provided broad numerical ranges for abatement and was to be used only as guidance, EPA found the system unreliable in testing. EPA removed the corrective action scale and recommended that school officials, with the help of trained personnel, consider only the eight factors when determining appropriate abatement. However, a subsequent study revealed that these factors were also unreliable because they did not correlate with airborne asbestos levels.

In this same study, a new factor termed "releasability" has shown promise. It relates to the apparent availability of releasable fibers from bulk materials and is based on the material's microscopic characteristics. The study found that releasability ratings given to bulk samples from a site correlated to the airborne asbestos levels at that site.

According to the Director of EPA's Exposure Evaluation Division, EPA expects to validate the reliability of this factor by November 1982 and to incorporate this information into guidance material later. According to the Director, many levels of review are still involved, the factor must be refined so that other laboratories can reproduce it, and understandable guidance must be developed before the schools can receive this information.

Although the eight factors of TAP remain as the present guidance, EPA urges local education agencies to contact their area's EPA regional asbestos coordinators when assistance is needed regarding an appropriate source of action for asbestos in their schools. EPA officials concede that the factors are unreliable and that contacting coordinators will not result in uniform responses because each asbestos coordinator will use subjective judgment in advising the need for abatement. Until EPA can verify the new factor, however, TAP is the only guidance available.

State activities initiated before TAP

None of the 11 States that we reviewed initiated its asbestos-in-schools activities because of TAP. As shown in appendix I, all the States except Illinois began their programs before TAP was instituted in 1979. State officials repeatedly cited publicity about asbestos problems as the reason they began their program.

Officials in all the States that we reviewed, except Massachusetts and New York, said that TAP either increased their activities or caused them to accelerate their program. For example, Illinois and Michigan provided asbestos workshops as a result of TAP. New Jersey increased its inspection activity because TAP made school officials aware of potential hazards and they requested inspections. However, the Massachusetts and New York programs were already in place, and TAP did not spur any additional activity.

Officials in 10 States agreed that EPA's guidance documents were helpful, although some officials considered them more helpful than others. In the remaining State, the documents were issued too late to be very useful.

Appendixes I and II describe State asbestos-in-school activities in each of the 11 States included in our review.

TAP unsuccessful in getting all schools inspected

EPA has publicly reported that TAP was unsuccessful in getting all schools to participate. Because no national inspection data is available, we obtained inspection statistics from 11 States. We found that about 79 percent of the 21,594 public schools included in our analysis were inspected.

EPA estimates that 30 percent of the schools, or 33,000 public and private schools nationwide, were not inspected as of August 1981. EPA based this estimate on data developed in States from EPA Regions V and VI. This estimate is somewhat similar to our information.

We developed statistics for the 11 States that we reviewed. Statewide statistics in a format we could use were available for only six States. EPA Region V provided us with computerized data for Illinois, Michigan, and Ohio, while Massachusetts, New Jersey, and the District of Columbia had statewide data. In the remaining States in which statewide statistics were not available, we obtained limited statistical data by contacting the most populous school districts. The schedule on page 12 shows that about 79 percent of the public schools were inspected. These percentages are based on about 21,600 elementary and secondary public schools, or 25 percent of the national total. The schedule does not include private schools because, of the 11 States, only Michigan had statewide data.

State or school district	Number of public schools	Number inspected
California		
Long Beach	76	76
Los Angeles	706	93
Sacramento	87	87
San Diego	167	167
San Francisco	106	18
District of Columbia	196	196
Florida		
Brevard County	62	62
Broward County	160	160
Dade County	263	263
Duval County	147	147
Escambia County	70	70
Hillsborough County	160	a/0 to 160
Orange County	108	108
Palm Beach County	96	15
Pinellas County	121	121
Polk County	102	102
Illinois	4,214	4,199
Massachusetts	2,163	1,432
Michigan	3,927	3,572
New Jersey	2,364	b/150
New York		
Buffalo	75	75
New York City	982	982
Rochester	50	50
Ohio	4,186	3,911
Pennsylvania		
Philadelphia	295	295
Pittsburgh	98	17
Texas		
Austin	81	81
Dallas	193	89
Ft. Worth	107	107
Houston	232	232
Total	21,594	16,877 to 17,037
Percent inspected		78 to 79

a/School district officials did not know how many schools were inspected.

b/Inspections by State Department of Health staff since 1981. Although some school officials have independently done inspections, the State does not know how many inspections were made and plans to inspect all schools anyway.

Inspection quality varies

Even though most public schools included in our review are reported to have been inspected, the quality of inspections is questionable, based on EPA's standards. In at least three cases only certain areas or features were inspected, while in another case inspections consisted of reviewing construction records. School districts in two States are still finding asbestos that was not identified in previous inspections.

Many asbestos inspections included only certain school areas or features. For example, when Massachusetts State officials inspected schools built between 1946 and 1973, they only looked for sprayed-on material in student-accessible areas. The officials did not include pipe lagging or boilerrooms in their inspections. During phase II of the State's inspection program, which is currently underway, officials will inspect pipe lagging and boilerrooms. The San Francisco Unified School District officials inspected school areas employees specified. The Los Angeles Unified School District officials usually inspected only pipe lagging in work areas the maintenance staff pointed out.

Additionally, the Dallas Independent School District relied on construction records for some or all of its facilities rather than on visual inspections and test sample analysis. EPA's guidance states that building construction records can be checked as a supplementary measure to determine if asbestos materials were listed in the building specifications. However, it noted that, since building records may be unreliable, checking records should not replace visually inspecting for, sampling, and analyzing friable materials in school buildings.

Another indication of incomplete inspections is the fact that some school districts are still finding asbestos materials after inspections had been made. According to the Director of Educational Facilities for the Florida Department of Education, school districts are still finding more asbestos in schools that have been inspected. Also, according to the Director of School Plant for the Austin, Texas, school district, more asbestos-containing material has been found after the initial inspections.

EPA concluded that many schools have not been inspected adequately, based on information received from regional asbestos coordinators, State and municipal reports, and other sources of information generated by TAP.

VARIED STATE AND LOCAL ABATEMENT RESPONSES

Without specific criteria from EPA, State and school officials used various criteria in making abatement decisions. As a result, responses varied from no action to removal of all friable asbestos.

For example, two localities chose opposite abatement criteria. Florida requires that public schools remove friable asbestos materials except where impractical. Any other abatement method must be approved by the State Board of Education. In the nine Florida school districts that we contacted, 181 to 261 1/ schools had asbestos materials. Corrective action was taken in 173 schools.

On the other hand, the Houston Independent School District has decided to take no abatement action, except for work done in conjunction with scheduled maintenance or renovation. According to its Director of Loss Control, who is responsible for the asbestos identification program, no action is planned until EPA determines exactly what constitutes an asbestos hazard. Of the 232 schools in the district, 115 had asbestos material.

The State of Massachusetts and the San Diego Unified School District have developed numerical systems for deciding when control actions are needed in their schools. For example, Massachusetts uses an index to evaluate asbestos situations using five factors--condition, accessibility, friability, presence in an air plenum, and asbestos content--and computes a total value. Values can range from 0 to 56. A score of 21 or higher indicates the need for controls. The following table shows the recommended action corresponding to the index score:

Index score	Recommendation
0 to 4	No action.
5 to 9	Review in 3 years and institute surveillance program.
10 to 15	Review in 1 year and institute surveillance program.
16 to 20	Review to determine if control or surveillance is appropriate.
21 and over	Control.

The State asbestos coordinator said the index was also used as a general guide for determining the type of abatement to recommend. Of the 1,432 schools inspected through June 1979 (phase I) of the State's asbestos program, 178 had asbestos. A total of 58 schools needed immediate action. As of March 1982, asbestos had been removed or encapsulated in all but two schools.

1/One school district could only estimate the number of schools containing asbestos.

The San Diego Unified School District hired a consultant who developed a matrix to use in deciding when and how to abate asbestos problems. The matrix applies values to factors such as asbestos content, friability, material integrity, accessibility, activity, air movement, and water damage. Based on the total matrix score, each situation falls into one of the following categories:

Score	Action
0-149	Defer--reevaluate periodically
150-300	Priority 3--encapsulate/enclose
300-450	Priority 2--encapsulate/enclose
450 and over	Priority 1--restrict entry and remove

Ten schools had asbestos, and the designated abatement action was taken in all cases.

According to EPA's Director, Exposure Evaluation Division, EPA is aware of the use of other systems, but doubts the systems' reliability. The various factors used in these systems are similar to the ones EPA determined were unreliable in its tests.

While the above numerical ranking systems take asbestos content into consideration in determining when and how to abate, the New York City Executive Director of School Buildings believes that no percent of asbestos content can be considered safe. He stated that the key criteria in assessing potential hazards are the location and condition of the material. If asbestos-containing material is damaged no matter what the asbestos content, fibers can become airborne and enter the occupied environment of the school. A total of 259 New York City school facilities had asbestos, of which 197 had been abated as of January 1982.

Public and media pressure also contributed to abatement decisions in five school districts (Sacramento Unified, San Francisco Unified, Philadelphia, Pittsburgh, and Decatur, Illinois). For example, the asbestos coordinator for the Philadelphia School District told us that asbestos-containing material was found on surfaces such as walls and ceilings in about 18 percent of all buildings. None was considered hazardous; but, because of public pressure, all asbestos material will be removed or encapsulated. Similarly, the Chief Construction Inspector for the Pittsburgh School District stated that, based on EPA's guidance documents, district officials concluded that no asbestos hazards existed. However, they removed asbestos in three schools and encapsulated it in another because of pressure from media, parents, and teacher groups.

EPA ISSUES INSPECTION AND NOTIFICATION RULE

EPA has spent nearly 3 years developing a regulation to control asbestos hazards in schools, but the final rule will do little to alleviate the varied local and State responses to asbestos hazards. Although the rule requires schools to inspect for asbestos, EPA has not provided sufficient guidance to help schools determine when asbestos is hazardous and what control actions are most appropriate. Without this information, there is no assurance that school occupants are being adequately protected. However, EPA expects to verify what it believes to be a reliable exposure indicator by November 1982 and issue guidance later.

How EPA's rule evolved

EPA has been aware of the potential hazards of asbestos in schools for several years. In September 1978 EPA began to address the problem of existing asbestos in school buildings. EPA initiated formal rulemaking on asbestos in schools in July 1979 and issued its final rule May 27, 1982.

EPA has been involved in regulating asbestos in buildings for many years. In 1973 EPA banned spray application of insulating and fireproofing material (but not decorative material) containing more than 1-percent asbestos by weight. In June 1978 EPA extended this ban to other construction uses of sprayed material containing more than 1-percent asbestos. Although EPA had banned spraying asbestos in buildings, it did not address the presence of existing asbestos in buildings.

The asbestos-in-schools problem was formally brought to EPA's attention in the form of two citizen petitions submitted under the Clean Air Act and TSCA. On September 18, 1978, New Jersey petitioned EPA to develop a regulation to control asbestos contamination in buildings. Later, on December 21, 1978, the Environmental Defense Fund filed a similar petition asking EPA to initiate rulemaking to control asbestos emissions in school buildings.

In September 1978, after receiving New Jersey's petition, EPA began developing TAP. In March 1979 EPA instituted TAP and soon thereafter denied New Jersey's and the Environmental Defense Fund's petitions. EPA cited two major reasons for the denials. First, EPA believed that TAP was the fastest way to reduce the risk posed by asbestos in schools. Second, EPA was collecting and evaluating information on asbestos problems and would in the future examine the need for Federal regulatory action.

The Environmental Defense Fund believed that TAP was an insufficient response to the problem and brought suit against EPA on May 18, 1979, to impel it to begin rulemaking. On July 13,

1979, EPA reversed its original denials and voluntarily decided to grant the Environmental Defense Fund's and New Jersey's petitions. EPA cited the following reasons, among others, for its reversal:

--TAP was unsuccessful in getting a significant number of schools to participate.

--EPA recently became able to develop abatement criteria.

--Resources to devote to rulemaking recently became available.

--EPA believed it needed to initiate the time-consuming rulemaking process in the event a regulatory program was justified in the future.

On September 20, 1979, EPA issued an advanced notice of proposed rulemaking on asbestos in schools; EPA intended to issue the rule in two parts. The first part would require inspections and the second part would require abatement. One year later, EPA issued its proposed identification and notification rule. This proposal became final May 27, 1982, nearly 3 years after EPA granted the petitions for rulemaking.

According to the program managers in charge of rulemaking, there was little activity on the rulemaking since the change in administration in January 1981. In fact, the final regulation is virtually identical, except for a few minor changes, to the proposed rule issued September 1980. According to the Director of EPA's Chemical Control Division, when the new administration took over, it needed time to become familiar with the issues, reassess its priorities, and review the rule.

The second part of the rulemaking plan to address abatement was abandoned in April 1981. EPA concluded that identifying hazards under its identification and notification rule will provide local school districts enough information to take corrective action on their own.

EPA's rule lacks hazard criteria

EPA's final rule will not alleviate the varied State and local responses to asbestos in schools. State and school officials will still abate based on various criteria. Although the rule requires inspection and notification, it still does not provide any additional guidance on when asbestos is hazardous and needs abatement. Rather, it relies on the guidance TAP provides.

EPA's final rule requires public and private elementary and secondary schools in the United States to identify friable asbestos-containing building materials, maintain inspection records and notify employees of the location of the friable materials which contain asbestos, provide the employees instructions

on reducing exposures to asbestos, and notify the schools' parent-teacher association of inspection results when friable asbestos is found. Inspections must be completed by June 1983.

EPA maintains that abatement is necessary in some schools. According to the final rule, abatement is often needed whenever friable asbestos is visibly damaged and easily accessible or has poor cohesive strength. The abatement guidance being used in the final rule is the same guidance that was available under TAP. As discussed previously, TAP has resulted in varied State and local abatement responses. Although school districts are encouraged to consult with EPA regional asbestos coordinators when complying with the rule and regarding abatement actions, this did not eliminate the inconsistent State and local responses to asbestos in schools under TAP. EPA expects to provide further guidance after it validates an exposure indicator this fall.

Schools that comply with the rule will still have to use their own criteria in making abatement decisions. According to the Acting Deputy Director of EPA's Chemical Control Division, responsible people will take appropriate action when given the available facts. EPA concedes, however, that notifiying parent-teacher groups may result in overreaction to asbestos conditions. In fact, according to the Director of EPA's Chemical Control Division, overreaction is probably more likely than underreaction. Although a hazardous school situation could theoretically go uncorrected, his guess is that local pressure will take care of it. However, EPA has no mechanism for ensuring that abatement action is taken in hazardous situations nor has it defined those situations. As discussed earlier, EPA is continuing to work on additional guidance, but has no target date for its completion. Even when completed, it is intended to be advisory only because EPA considers abatement to be a local decision.

CONCLUSIONS

TAP was partially successful. It provided some information and stimulated some inspection and abatement activity. However, it is impossible to quantify the results of TAP. Not only is data on inspections and abatement incomplete, but actions that have been taken were not always a result of TAP. The program's effectiveness was limited by its voluntary nature and its lack of criteria defining when asbestos is hazardous and needs abatement.

Although EPA now requires schools to be inspected and parents and employees notified of asbestos presence, it still has not provided any additional guidance on when asbestos is hazardous enough to warrant abatement. Because asbestos is still present in many schools that have been inspected and more will probably be discovered due to EPA's inspection requirement, many school officials will be faced with future abatement decisions. We believe the lack of definitive Federal criteria has resulted in State and local use of different criteria for abatement decisions. Until EPA develops such criteria, we believe that school officials may

continue to overreact and spend money needlessly or, more importantly, underreact and expose school occupants to hazardous asbestos conditions in schools. However, EPA is currently addressing this issue in its research. It expects to validate what it believes to be a promising measure for assessing asbestos exposure by November 1982 and later issue guidance based on this measure. Consequently, we have no recommendations to the Administrator, EPA, at this time.

CHAPTER 3

LITTLE ACCOMPLISHED UNDER THE ASBESTOS SCHOOL HAZARD DETECTION AND CONTROL ACT

The purposes of the Asbestos School Hazard Detection and Control Act of 1980, to (1) provide financial assistance to detect and correct hazardous asbestos conditions in schools and (2) establish an informational program for controlling asbestos in schools, were not achieved. Because no funds were provided to the financial assistance programs, the Department of Education relegated the informational program to a low priority. Although Education provided some general procedures on how to detect and correct asbestos, it did not provide specific criteria for determining when asbestos is hazardous and warrants abatement. Consequently, Education did not resolve the dilemma facing school officials: When should asbestos be removed from their schools?

In addition, Education-required State reports and records provide limited information on the scope of asbestos in schools. The act requires that States report on their plans to distribute asbestos information and to maintain records on asbestos detection and abatement in their schools. However, few State reports were submitted to Education, and State records were incomplete. Lack of funding and absence of an EPA rule requiring local inspection and recordkeeping contributed to this condition. As a result, the extent of asbestos in schools remains uncertain.

OBJECTIVES OF THE ACT

The Congress found that, despite some State and Federal activities, there was no systematic program for identifying and remedying hazardous asbestos conditions in schools. It further found that the presence of friable or easily damaged asbestos in school buildings creates an unwarranted hazard to the health of the schoolchildren and school employees exposed to such materials. It also determined that, without an improved program of information distribution, technical and scientific assistance, and financial support, many local educational agencies and States would not be able to mitigate the potential asbestos hazards in their schools. So, on June 14, 1980, the Asbestos School Hazard Detection and Control Act of 1980 was enacted.

The act, among other things,

--authorizes grants for inspecting schools for asbestos and loans for containing or removing hazardous asbestos;

--requires a review of EPA guidelines for determining when asbestos in schools constitutes a health problem and needs abatement, the compilation and distribution of scientific information on health hazards, and technical assistance in detecting and controlling asbestos; and

--requires States to report to Education on asbestos information distribution and recordkeeping and maintain records on asbestos conditions in their schools.

The act was to be carried out by the Secretary of Education with the assistance of the asbestos hazards school safety task force appointed by the Secretary. The task force was composed of 10 members of various health and education-related agencies and organizations, including EPA.

NO LOANS OR GRANTS ARE AVAILABLE FOR ASBESTOS DETECTION AND CONTROL

One of the primary purposes of the act, to provide financial assistance to State and local education agencies, was not realized. The act authorized the appropriation of $22.5 million for an asbestos detection grant program and $150 million for an asbestos hazards control loan program. These funds were to remain available for obligation through September 30, 1983. However, a general extension of authorizations provided by the Omnibus Budget Reconciliation Act of 1981 (Public Law 97-35) extended the authorization through September 30, 1984.

Despite the authorization, the act has not been funded. The administration did not request the Congress to appropriate funds. Education did request funding for the act for fiscal year 1981, but the Office of Management and Budget denied the request in August 1980. According to a budget examiner in the Office of Management and Budget, the request was denied because of other budget priorities. Also, according to the budget examiner, the time of the request was one of extraordinary budget constraints. Education did not request funding again.

ASBESTOS HAZARD CRITERIA STILL LACKING

A requirement of the act, to review and revise, as necessary, EPA guidelines for determining when asbestos in schools is hazardous and needs abatement as well as provide other scientific and technical assistance, was not completed. As required, Education did provide procedures for asbestos detection and control. However, the centerpiece of information, that is, when asbestos poses a hazard in schools and thus what appropriate action to take, was not completed. The task force was charged with reviewing EPA guidelines designed to help school officials determine the extent of danger from asbestos materials in their schools. However, it never completed this task, because, without funding of the grant and loan programs, Education considered the informational program

a low priority. As a result, although school officials were provided information on how to test for, contain, and remove asbestos as well as how to select contractors to do the work, they were never advised as to when asbestos is hazardous and warrants corrective action.

Education issued asbestos detection and control procedures

Shortly after the act was passed, Education developed standards and procedures for asbestos detection and control projects, which it issued in its final regulations of January 16, 1981. Because the act directed Education to avoid duplicating, to the extent possible, any work done by EPA, these procedures relied mainly on EPA documents.

In consultation with the asbestos hazards school safety task force, Education established and distributed to the States

--procedures for testing for asbestos in schools, containing and removing asbestos materials in school buildings, replacing removed asbestos materials with appropriate materials, restoring schools to comparable conditions, and determining which contractors are qualified to carry out the procedures and

--incomplete standards for evaluating the likelihood of release of asbestos fibers into the school environment.

In avoiding duplication of EPA activities, as required by the act, Education relied on EPA to the extent that most of the procedures and standards have been adopted directly from those established in EPA's proposed regulations for asbestos in schools. For example, Education used EPA's guidance on inspecting school buildings and sampling and analyzing friable materials. It also used EPA's procedures for containing and removing building materials containing asbestos.

Criteria for determining asbestos hazard and corrective action incomplete

Although Education issued standards and procedures for detecting and controlling asbestos, it did not complete its revision of EPA's guidelines in determining when asbestos in schools is hazardous and needs abatement. The task force initially revised EPA's guidelines but did not complete the revision to identify those schools in which exposure to asbestos fibers constitutes a health problem and the appropriate corrective action. After 1980 the task force never met to address this issue, because, without funding, Education considered the asbestos program a low priority. In addition, the task force did not complete its compilation of

medical, technical, and scientific information to be distributed to State and local educational agencies. Consequently, after inspecting for and finding asbestos, school officials were left with incomplete information on the appropriate corrective action.

Although the task force was established by the act to help States and local educational agencies determine the extent of danger from exposure to asbestos materials in schools, it did not complete the criteria for determining when asbestos in schools is hazardous and what corrective action is appropriate. Specifically, the act required the task force to review EPA guidelines for identifying those schools in which exposure to asbestos fibers constitutes a health problem and for taking appropriate corrective actions at such schools in order to determine whether any modifications of such guidelines should be recommended to the Secretary.

Although the task force modified EPA's guidelines, it did not complete its revision. The task force revised EPA's draft asbestos exposure assessment, and Education published the revised guidance system in its final regulations on January 16, 1981. According to Education's final regulations, the task force preferred a less rigid system. It therefore reduced the factors in determining the likelihood of asbestos fiber release. The system identified four factors--condition, exposure, friability, and asbestos content.

This is how the system is designed to work: Each factor is given a score that best corresponds to the description provided in the guidance system. For example, in scoring for the condition factor, if less than 10 percent of the asbestos material is coming loose, this condition would be scored 2 on a scale of 0 to 5, indicating moderate deterioration. Once scores have been assigned to the individual factors, a weighted formula is applied, which results in a guidance number.

Although this guidance number is to indicate the appropriate action needed, Education never related the numbers to specific actions. In its final regulations, Education said that several members of the task force are conducting a comprehensive analysis of data to develop specific guidance numbers that establish criteria to assist school administrators in deciding the appropriate action to take once asbestos is found. It also said that it would distribute this information when the task force completes its analysis.

The task force never met again, however. It met only three times--September 29, November 12, and December 10, 1980. Although a fourth meeting was scheduled for March 4, 1981, the meeting was deferred until the new administration had an opportunity to become settled, permanent personnel were selected, and the Secretary named a new chairman.

However, the incoming Secretary of Education did not select a chairman to replace the outgoing one who resigned with the former administration January 20, 1981. Although it was questionable why no chairman was appointed, according to Education's Director, State and Local Education Programs, Office of Elementary and Secondary Education, the implications were that without funding the program just died.

Incomplete health hazard information

Although the act required the task force to compile and distribute medical, scientific, and technical information on the health and safety hazards associated with asbestos materials, little was accomplished. The task force began compiling the information; but, because it did not meet after December 10, 1980, it did not complete the compilation. According to Education's final regulations, if the task force did not complete its compilation by March 15, 1981, EPA's proposed regulations documenting health hazards associated with exposure to asbestos fibers would suffice for State distribution to schools.

STATE REPORTS AND RECORDS PROVIDE LIMITED INFORMATION

Another requirement, that States submit reports on asbestos actions and maintain records on asbestos conditions, resulted in limited information. States were required to submit to Education plans and 6-month progress reports on their distribution of asbestos information to local school districts and on their recordkeeping and to maintain records on asbestos conditions in their schools. Although most of the States we reviewed submitted plans on information dissemination and recordkeeping, few 6-month reports were submitted describing the actions taken as outlined in their plans. The reports that were submitted provided little information. Without funding, Education did not continue to pursue the State information and States lost their incentive to provide it.

Also, little additional information was provided under the act's State recordkeeping requirement. EPA's delay in issuing its inspection and recordkeeping requirements hindered the collection of useful information on the extent of asbestos in schools. However, EPA has since issued its final regulations, which would provide the data base for States.

Reports add little data

Although State plans outlined the reponsibility and procedures for distributing asbestos information and maintaining records on asbestos in schools, the 6-month reports provided little additional data on the scope of the asbestos situation. The act required the States to submit a plan to Education

--describing its procedures for distributing information to local educational agencies;

--describing the information to be distributed;

--describing its procedures for maintaining records on detection, presence, and control of asbestos in schools; and

--designating a State agency or unit responsible for carrying out the provisions of the act.

In addition, States were to submit to Education three 6-month reports describing the actions taken in accordance with their plans.

In our review of 11 States, only the District of Columbia did not submit a plan. Generally, State plans complied with the above requirements of the act. However, few 6-month reports were submitted, and those that were provided little information. As shown in the table on page 26, only 2 of the 11 States that we reviewed submitted the first 6-month report, and only 4 submitted the second 6-month report. In fact, according to the former Director of Education's Asbestos School Hazard Detection and Control Program, a total of only 12 reports were submitted nationwide. States were not submitting the reports, according to several State education officials, because they had other priorities and did not perceive that Education considered them important. We completed our review before the third and last report was to be submitted.

Status of State Reporting Activity

State	State plan submitted	First 6-month report submitted	Second 6-month report submitted
California	Yes	Yes	Yes
District of Columbia	No	No	No
Florida	Yes	No	No
Illinois	Yes	No	No
Massachusetts	Yes	No	Yes
Michigan	Yes	No	Yes
New Jersey	Yes	No	No
New York	Yes	Yes	No
Ohio	Yes	No	No
Pennsylvania	Yes	No	Yes
Texas	Yes	No	No
Total	10	2	4

The reports that were submitted did not provide much information on asbestos in schools. Only Michigan's report included statistics on asbestos detection and the corrective action taken in its schools. The remaining five reports provided only general information. For example, California and Pennsylvania reported that they were distributing information on asbestos liability to their schools.

Education took several actions to encourage the States to submit adequate plans. It contacted those States which had not submitted plans and urged them to do so. It also reviewed each State's plan for satisfactory completion of the requirements and provided suggestions to States to improve their plans. However, because of a lack of funding and the low priority of the program, Education took no action to encourage that the subsequent 6-month State reports be submitted. The act required States receiving administrative funds for any program under the General Education Provisions Act to provide such reports and plans. According to Education's Director, State and Local Education Programs, Office of Elementary and Secondary Education, Education could have withheld such funds from the States for not reporting, but it would have been too strong an action.

Recordkeeping coordination delay

The objectives of the recordkeeping requirements were not achieved. States are required to maintain records on the asbestos detection activities, the presence, if any, of friable asbestos in school buildings, and the asbestos control activities. This requirement was instituted with the understanding that EPA would issue its final regulations requiring inspection and recordkeeping at the local level to coincide with the issuance of Education's recordkeeping procedures at the State level. However, EPA did not issue its final regulations until 16 months after Education's.

Both EPA and Education published their proposed regulations on September 17, 1980. EPA proposed that each local education agency inspect for and retain records on its detection activities and on the amount of friable asbestos in schools. Education proposed that States maintain copies of the recordkeeping form completed by each of its local education agencies in compliance with EPA regulations. It was anticipated that schools would be required to inspect for asbestos and that information required at the State level would be readily available at the local level.

Education issued its final regulations on January 16, 1981, within the time period required by the act. However, EPA did not issue its final regulations until May 27, 1982, over 16 months later. Consequently, State records are based on voluntary inspections rather than the intended mandatory inspections using EPA established procedures. As discussed in chapter 2, under the voluntary program, not all schools were inspected and, of those that were, the quality varied among school districts. Thus, the data collected by the States was incomplete and questionable.

EPA has since issued its final regulations requiring local educational agencies to begin inspecting schools, which would provide the data base for State recordkeeping as envisioned by the act.

CONCLUSIONS

Overall, the Asbestos School Hazard Detection and Control Act of 1980 has had little impact on State and local activities regarding asbestos in schools. One of the act's primary purposes, to provide financial assistance to detect and correct hazardous asbestos in schools, was not achieved. Because the grant and loan programs were not funded, Education relegated the informational program to a low priority. Education did provide technical assistance on matters such as testing for, containing, and removing asbestos. However, as in the case with EPA, the centerpiece of information--that is, when asbestos poses a hazard in schools and requires abatement--was not completed. As discussed in chapter 2, EPA is currently addressing this issue in its research. It expects to validate what it believes to be a promising measure for assessing asbestos exposure by November 1982 and later issue guidance

based on this measure. Therefore, we believe it would be duplicative and unnecessary for Education to pursue this matter.

Recordkeeping and reporting requirements provided limited information on the extent of asbestos in schools. Few States submitted reports, and State records were incomplete. Absence of an EPA rule requiring local inspections and recordkeeping resulted in only limited data available to be collected. However, EPA's rule, issued in May 1982, should provide the data base for State recordkeeping as envisioned by the act.

CHARACTERISTICS OF STATE PROGRAMS TO ADDRESS ASBESTOS IN SCHOOLS

State	Year program began	Schools included in program	Inspections done by State?	State funding for abatement?	State authority to require local action?
California	1977	Public (K-12)	On request	(a)	No
District of Columbia	1977	Public/Private (K-12)	Yes	No	No
Florida	1977	Public (K-12) and Community Colleges	No	Yes	Yes (inspect & abate)
Illinois	1979	Public (K-12)	On request	No	No
Massachusetts	1977	Public (K-Higher Education Institutions)	Yes	Yes	No
Michigan	1976	Public/Private (K-12)	(b)	No	No
New Jersey	1977	Public (K-12)	Yes	No	No
New York	1978	Public (K-12)	On request	Yes	Yes (inspect)
Ohio	1977	Public/Private (K-12)	No (note c)	No	No
Pennsylvania	1977	Public/Private (K-12) and State Colleges/ Universities	On request until June 1980	No	No
Texas	1978	Public/Private (K-12)	On request	No	No

a/State matching (50 percent) funds under the deferred maintenance program may be used at the expense of other maintenance work.

b/Performed inspections and laboratory analysis for two counties in a pilot study.

c/The State requested the local health departments to inspect public schools as part of their normal inspections.

APPENDIX I

STATE ASBESTOS PROGRAM SUMMARIES

CALIFORNIA

California has had a limited role in the school asbestos program. The State asbestos coordinator estimated that he devotes about 5 percent of his time to school asbestos activities. He noted that EPA has not documented at what level of exposure asbestos is a hazard, and that if EPA believed asbestos to be a problem, the program would be mandatory, not voluntary. Additionally, he said that the State would have been more active if the response from local school districts had been greater.

The State Department of Education has been responsible for school asbestos activities since mid-1980. During the period 1977 through mid-1980, the Departments of Health and Education were involved with school asbestos activities. Department of Health activities consisted primarily of inspecting schools on request, including any laboratory analysis required. Most inspections occurred during a 5-month period in 1979, when about 11 schools were surveyed.

Before assuming responsibility for school asbestos activities, the Department of Education was involved primarily in distributing information to local schools and other officials. Two letters were sent to school officials in early 1977 concerning the general health hazards of asbestos in ceilings and the potential hazard posed by this situation. Additionally, the department developed a departmental procedure in 1977 which suggested that school district officials inspect their facilities for asbestos. In 1978 and 1979 the department sent several memorandums to its regional staff which discussed potential asbestos hazards and contained instructions for surveying schools.

Since the Department of Education became responsible for asbestos, it has

--distributed copies of EPA's proposed rule and the Asbestos School Hazard Detection and Control Act to school districts,

--prepared the State plan required by the Asbestos School Hazard Detection and Control Act,

--handled telephone inquiries and inspected 10 to 12 schools on request, and

--prepared cost estimates for alleviating asbestos hazards in schools.

The State does not provide funds specifically for asbestos abatement work. However, as a result of legislation passed in September 1981, local governments are allowed to use deferred maintenance program funds for this purpose. This legislation expanded the definition of deferred maintenance to include

asbestos related work, in addition to maintenance and renovation projects normally included. In this program the State pays half the cost of the projects and the local government the remainder.

The State has no legislation or authority requiring inspection or abatement work by local governments. The State leaves the decision whether to inspect up to local officials. Since no summary data was available at the State level concerning the extent of inspections and the procedures followed by local school districts, we visited five of the most populous school districts to determine if inspections have been done (San Francisco Unified, Sacramento Unified, Los Angeles Unified, Long Beach Unified, and San Diego Unified). Three of these districts--Sacramento, Long Beach, and San Diego--have performed complete inspections of their facilities, while two districts--San Francisco and Los Angeles--have inspected only selected school areas such as work areas and areas for which complaints have been received from employees.

Los Angeles school officials told us that a comprehensive inspection program for the 11,000 to 13,000 buildings in the district would be extremely expensive. Therefore, schools have generally been inspected only when maintenance staff report that they suspect asbestos in work areas. Portions of 93 schools have been inspected as of June 1982. The safety officer for the school district believes that every building probably has at least some asbestos. San Francisco school officials have inspected those schools for which a complaint has been received from employees.

DISTRICT OF COLUMBIA

The District's Division of Occupational Health and Board of Education have both been involved in school asbestos activities. Public school inspections were completed by Division of Occupational Health staff in 1978, before TAP. The inspections were done as part of the quarterly environmental health evaluations. Some private schools were inspected in 1979 as a result of a request by the Catholic diocese. There are 120 private schools in the District, of which 42 are Catholic diocese schools. According to the Safety Manager of the Board of Education, about 14 of the diocese schools have been inspected for asbestos. This official had information on 35 of the remaining 78 private schools--none have been inspected. The Division of Occupational Health staff performing the inspections received in-house training on detecting asbestos-containing material. All school areas were inspected--classrooms, corridors, and boilerrooms.

Eight of the 196 public schools had asbestos material requiring abatement in classroom or corridor areas. Encapsulation was usually the abatement method used. Most schools had asbestos pipe insulation, which was then wrapped with gauze. The cost of abatement work and laboratory analysis was covered by regular maintenance funds. There were no specific appropriations for asbestos-related activities.

The District has no specific legislation or authority for inspecting or abating asbestos hazards; Division of Occupational Health staff performed inspections as part of their regular health surveys. Corrective action was recommended based on these inspections.

Although formal inspections were completed in 1979, Division of Occupational Health staff will reinspect on request. The Acting Chief of the Division noted that this program will continue because future damage or deterioration may pose potential problems.

FLORIDA

Florida has been involved with school asbestos activities since February 1977, when the State Department of Education sent a letter to all public school and community college officials requesting them to inspect their facilities. In September 1978 the department required surfaces to be free of sprayed-on asbestos-bearing material exceeding Federal requirements. The school regulations were revised in 1981 to require more specifically that officials visually inspect and abate asbestos in public schools and community colleges. Although local officials are required to perform inspections, the State has no procedure verifying that inspections are actually done. Identified friable and cementitious asbestos-bearing materials which do or could allow the release of asbestos fibers must be removed. If complete removal of friable asbestos material is impractical, an alternate method may be used if the board of education concurs.

In both 1979 and 1980, the department sent questionnaires to public schools to determine the status of inspections and abatement work. From the responses, the department developed a summary showing asbestos found in terms of square feet. The State asbestos coordinator estimated that abatement work will be completed in all public schools by the summer of 1982.

The State has provided funds to public schools and community colleges for asbestos abatement work. In 1980 and 1981 the State appropriated a total of $10,473,950 for this purpose. The cost of laboratory analysis was the responsibility of local school officials.

Until recently, the State asbestos coordinator spent about 50 percent of his time on school asbestos activities. He currently devotes somewhat less time to the program.

ILLINOIS

Illinois first became involved with school asbestos activities in the fall of 1979. According to the State asbestos coordinator, most State activities were performed in conjunction with EPA. The coordinator believes, however, that publicity over asbestos

problems in other States was the impetus for the State's activity. Most State involvement in school asbestos occurred before May 1981 and consisted of

--giving 12 to 15 statewide workshops for local officials on the health hazards of asbestos and on procedures for identifying and abating hazards,

--responding to inquiries from local officials and disseminating requested information, and

--doing some inspections on request.

Since May 1981 State activities have consisted primarily of answering inquiries, which the asbestos coordinator said have decreased as time passed. He estimated that overall he has devoted about 10 percent of his time to school asbestos activities.

The State asbestos coordinator said that the State role has been advisory because no legislation or authority requires inspections or corrective action by schools. No State funds have been provided to local schools for inspections or abatement work. However, the school districts can recover such costs under the Health, Life, and Safety Code, which allows the districts to assess a tax levy or issue bonds. However, the coordinator noted that most of these funds are used for other improvements or repairs required under the Health, Life, and Safety Code.

Laboratory analysis of samples taken by local officials are done by private laboratories and paid for by the local schools.

MASSACHUSETTS

Massachusetts school asbestos activities began in 1977 when a special legislative commission was funded to investigate the extent of asbestos use and exposure in public schools and buildings. State activities consist of two phases. In phase I, State personnel from the Department of Labor and Industries inspected classroom areas for spray-on asbestos material (pipe insulation was not included) in public schools built or renovated during the years 1946 to 1973. These inspections began in 1977 and were completed in 1979. Phase II, which began in the fall of 1981, consists of (1) inspecting phase I schools for pipe insulation, (2) inspecting boilerrooms in phase I schools, (3) reinspecting phase I schools where asbestos was found but no corrective action was recommended and (4) inspecting public schools built outside the phase I time frame and other public buildings (for example, municipal buildings and State college facilities) for spray-on asbestos materials and pipe insulation. These inspections are still in process.

The State has no legislation or authority requiring school officials to inspect or abate. However, State personnel do the inspections, and State funds are provided for public schools which

make corrections recommended by the State. State funds can cover from 50 to 75 percent of the cost of abatement work. The State appropriated $2 million for schools performing recommended corrective action under phase I. Laboratory analysis is done by the State at no cost to local schools. No funds are currently available for abatement work recommended under phase II, which will take an estimated 8 or 9 years to complete.

MICHIGAN

Michigan initially became involved with school asbestos activities in 1976 when the State Bureau of Environmental and Occupational Health began a 2-year pilot study in two school districts. This study was designed to determine the extent of asbestos in schools. Inspections were done by local health department staff, and laboratory analysis was performed at the State laboratory. As a result of this study, the Bureau of Environmental and Occupational Health and the State Department of Education sent a joint letter to public and private schools urging that they inspect their facilities. The bureau continues to provide free laboratory analysis and advice, on request.

In late 1979 the bureau conducted about 15 workshops for local officials and any other interested parties. These workshops dealt with asbestos health hazards, identification, and abatement.

No State legislation or authority exists requiring local schools to inspect for asbestos or to perform abatement work. Additionally, no funds are available for these activities.

The State Department of Education became more active in school asbestos activities in 1980 as a result of the Federal Asbestos School Hazard Detection and Control Act. Its involvement has primarily consisted of obtaining data from public and private schools on their asbestos identification and abatement activities and mailing to schools copies of proposed and final Federal asbestos regulations. Since the bureau has been involved with school asbestos, it has had two staff persons devoting about 5 percent of their time to school asbestos activities. The State Department of Education has had one staff person spend about 2 weeks on school asbestos activities.

NEW JERSEY

New Jersey's asbestos activities began shortly after asbestos hazards were discovered in Howell Township in 1976. In January 1977 the State Department of Education sent a letter to public school districts asking them to inspect their facilities for asbestos and report the results to it. About 250 districts reported finding asbestos.

The State Department of Health also became involved with asbestos in schools in August 1977, when officials began visiting schools which were reported to have contained asbestos.

A State task force was established in 1977, comprising officials from the State Departments of Education, Health, Environmental Protection, Treasury, and Consumers Affairs. The task force's mission was to determine the extent of asbestos hazards in public buildings and safe removal procedures. This task force issued its own minimum specifications for asbestos removal in 1979 prior to being disbanded.

A second task force was established in 1979 to study various aspects of the asbestos problem. Two potentially serious areas were identified (1) improper disposal of asbestos in landfills and (2) asbestos contamination of water from asbestos cement pipes. This task force is currently inactive; however, before being disbanded, it advised against using encapsulants in abating asbestos hazards or potential hazards.

In 1979 the New Jersey Department of Treasury, Division of Building and Construction, developed a training course for asbestos removal by contractors. This course is actually taught by an EPA Region II technical advisor and is required for certification before a contractor can perform asbestos removal work in the State.

At the end of 1980 the State established a formal asbestos control program within the Department of Health. All public schools (K-12) are to be inspected under this program, starting with those which previously reported problems. Inspections by State personnel began in 1981, and four full-time staff persons from the Department of Health are currently working on these activities. Facilities other than public schools may be inspected on request, but public schools have priority. As of April 1982 about 6 percent (or 150) of the public schools had been inspected. In addition to performing inspections, program staff have made random checks of removal projects in progress to assess compliance with proper procedures.

Since statewide information on abatement criteria used by local school districts was unavailable, we contacted an official from the most populous school district in the State--Newark. The Superintendent for Design and Construction stated that, because of cost, abatement work has to be done on a priority basis. Areas occupied by students and faculty are being done first and other areas (boilerrooms and student-restricted areas) will then be done.

No State legislation or authority exists requiring inspection or corrective action, nor are State funds provided for such purposes.

NEW YORK

New York first became involved with school asbestos activities in 1978. The State Departments of Health and Education were both involved in disseminating information to schools on potential health hazards. The Department of Health performed inspections and

laboratory tests for schools on request until mid-1979. The legislature passed the School Asbestos Safety Act in March 1979 to take effect July 1979. The act gave the Department of Education sole responsibility for the school asbestos program. At that time, the Department of Health discontinued inspections and laboratory analysis for public schools due to funding restrictions.

The School Asbestos Safety Act required public school officials to inspect their facilities for loose or friable asbestos and to report the results to the Department of Education before November 1979. Annual reports are also required to be submitted by the school districts showing the status of their asbestos activities (that is, identification and abatement.) To assist the school districts, the department prepared guidance in 1980 on controlling and abating asbestos conditions in public schools. Although it is based partly on EPA's guidance documents, the State disagrees with EPA's position that asbestos-containing ceiling tiles should be of no concern and warns that damaged ceiling tiles can release asbestos fibers. The State believes that, since there is no known safe threshold for asbestos exposure, "the 'prudent person' approach would indicate that, at the least, where feasible, excess asbestos exposure be controlled." Although the State guidance discusses factors which can increase exposure, it does not provide a formula for deciding where corrective action is necessary or which method is most appropriate.

Since statewide summary data on the number of schools with asbestos and those which have been abated was not available, we contacted officials from the three largest school districts in New York (New York City, Buffalo, and Rochester) to obtain data. Only New York City could provide abatement statistics. A total of 259 school facilities had asbestos, of which 197 have been abated. The remaining schools are expected to have abatement work completed in the summer of 1982.

An architect for the Rochester School District said it has decided to encapsulate or enclose asbestos material in those schools which may eventually be closed because of declining enrollment. All 50 schools in the district have been inspected, with 44 found to have asbestos-containing material.

Although the School Asbestos Safety Act requires inspections by public schools, abatement work is not mandated. However, State grants for abatement have been available to school districts since 1980. The State has appropriated $1.75 million each year for this purpose. School districts must apply to the State Department of Education for grants and include specific information on the nature and cost of the work. Grants are distributed based on a formula used for State aid to schools. A school district receives 40 percent of the cost of the project, plus a percentage of the remaining cost based on the State school aid ratio to that district.

The State asbestos coordinator estimated that he has devoted between 10 and 20 percent of his time to school asbestos activities.

OHIO

According to the State asbestos coordinator, Ohio's school asbestos activities have been essentially advisory. No State law or other authority requiries inspection or abatement activity, and no State funds are provided for these purposes.

The Department of Health is the State agency primarily responsible for school asbestos activities. In 1977 the department contacted its district offices, the Board of Building, and the State Department of Education to determine if they were aware of any school asbestos problems. None were. In 1978 the department, at the request of the Governor, designated a staff person as State coordinator.

At the request of the Department of Health, local health department staff inspected most public schools for asbestos. This was done during 1979 and 1980 in conjunction with their normal inspection activities. The Department of Health does laboratory analysis for schools free of charge. However, due to the limited capacity of the State laboratory, most analyses for schools are done by private laboratories.

In 1979 the department held nine statewide meetings for local health department officials to explain the health hazards of asbestos and methods of detection and abatement. Officials from about 120 of the 159 local health departments attended. Additionally, the department has held, or participated in, meetings for State and local officials and media. These meetings were designed to inform officials of potential health hazards and to enlist their support.

PENNSYLVANIA

Pennsylvania first became involved in school asbestos activities in 1977, when its Bureau of Occupational Health began doing inspections and laboratory analysis on request. The motivating factor was publicity concerning asbestos hazards in schools elsewhere. Inspections were done until June 1980 when the bureau was abolished. No estimate of the number of schools surveyed could be provided. Besides public and private schools, the bureau also inspected State buildings.

The State Department of Education became involved with school asbestos in 1979 and, with the Bureau of Occupational Health, mailed a questionnaire to public and private schools to determine the extent of asbestos in these facilities. The Department of Education took over sole responsibility for school asbestos activities in mid-1980. Since then, it has responded to inquiries,

prepared a State plan under the Asbestos School Hazard Detection and Control Act, and sent out a questionnaire to all public and private schools (including State colleges and universities) in December 1981 to determine if they have been inspected for asbestos and if abatement was done.

The State asbestos coordinator noted that Department of Education asbestos activities have been limited because it does not have the resources or expertise to perform inspections or do laboratory analysis. The State coordinator estimated that he has devoted about 5 percent of his time to school asbestos activities. He expects this to increase due to the need to review and summarize the December 1981 questionnaire.

The State has no legislation or authority requiring school officials to inspect for or abate asbestos. In addition, no State funds are available for these purposes.

Since current statewide data was unavailable on inspections of public schools, we contacted officials of the Philadelphia and Pittsburgh School Districts to determine what inspection activity had occurred. Pittsburgh had inspected 17 of 98 schools--those built between 1946 and 1973. It is currently inspecting the remaining schools. The Philadelphia School District had inspected all of its 295 schools.

TEXAS

Both the State Department of Health and the Texas Education Agency are involved in school asbestos activities. The Department of Health does laboratory analysis at no charge for public and private schools. Over 4,000 bulk samples had been received for analysis as of February 1982.

The Texas Education Agency first became involved with school asbestos in 1979 when, in conjunction with the Department of Health, it sent information on asbestos hazards to public and private schools. The material included a post card to be returned to the department, stating whether school officials suspected that their facilities had any asbestos containing material. Although a department official believed the post card responses had been summarized, no summary report could be located. Since September 1980, the Texas Education Agency has become more involved in school asbestos activities as a result of the Asbestos School Hazard Detection and Control Act. This involvement has included

--handling telephone inquiries and mailing background information to public and private schools;

--preparing a State plan as required under the act;

--inspecting "a few" schools on request; and

--mailing a letter to all public and private schools (kindergarten to grade 12) stating that the Asbestos School Detection Hazard and Control Act, required them to inspect their facilities for asbestos and maintain certain records. 1/

School districts were directed to report to the Texas Education Agency on the results of their inspections, but the response was poor. As of February 1982, 1 year after the Texas Education Agency sent its letter, only 20 of 1,100 public school districts and 3 private schools had responded. Additionally, the Texas Education Agency has obtained laboratory analysis reports from the Department of Health for 81 public school districts and 31 private schools. However, the reports sometimes do not identify the school associated with a particular sample analysis. When submitting bulk samples to the department, school district officials do not always identify the schools from which they were taken.

The State coordinator estimated that he has spent about 10 percent of his time on asbestos activities since 1979. Department of Health officials noted that three laboratory personnel and three other staff persons have worked on asbestos activities an estimated 5 to 50 percent of their time. The laboratory personnel represent at least one full-time-equivalent.

Since no statewide summary data was available on inspection activity by schools, we visited four independent school districts --Austin, Dallas, Ft. Worth, and Houston. Three school districts --Austin, Ft. Worth, and Houston--have inspected all their school facilities. The Dallas school district did not inspect facilities built in 1970 or later. In these cases, construction records were reviewed to determine if asbestos material was used. In schools built before 1970, if school officials suspected the presence of asbestos material, a sample was taken by a school official and sent for laboratory analysis.

Many private schools in Texas have been inspected for asbestos. The EPA Regional Office in Dallas, on request, has inspected most of the Catholic diocese schools (about 250) in the State.

1/The Texas Education Agency misinterpreted the act. It contains no such inspection requirement.

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